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Worldwide Report

ENVIRONMENTAL QUALITY

No. 375



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2 November 1982

WORLDWIDE REPORT ENVIRONMENTAL QUALITY

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DACCA MEET DISCUSSES MEASURES AGAINST SEA POLLUTION

Dacca THE NEW NATION in English 10 Oct 82 p 8

[Text]

CHITTAGONG BUREAU

October 9: Speakers at a discussion meeting held in observance of Fifth World Maritime Day sought global cooperation to keep the sea free from pollution with a view to maintain continuous human prosperity and stressed self consciousness of seafarers in this connection.

The discussion meet on 'Global cooperation to protect sea pollution', was held this morning at Seafarers Hostel at Halishar. The function was chaired by Captain M. Shafi, Director General department of shipping. The meet was also addressed among other by Mr A.K.M. Kamaluddin Chowdhury, Secretary, Ministry of Ports, Shipping and IWT, Mr Halhauzen Resident Representative of United Nations Development Programme, Captain Islam and Mr A.B.M. Tabarakullah.

The speakers emphasised effective pollution control to protect the untapped sea resources scattered throughout the globe. The pollution has yet not reached an alarming stage in the country but we must take necessary steps to halt pollution with awareness.

If the rivers and sea of the country become polluted it will be a futile task to go for anti-pollution measures at a huge cost, the

speakers opined. Moreover the pollution will reduce the fish and other marine resources, they said.

Expressing concern at unabated discharging of cargo sweeping waste and engine oil wastes from foreign ships at our ports, the speakers called upon the government to enact laws to prevent such discharging. There are provisions for fines at foreign ports for such unlawful discharges, the speakers added.

Stressing training for seamen in this regard speakers opined that discharge of crude oil and vessel fuel is the main source of sea pollution.

Giving a graphical sketch they said discharging of such oil was 21 lakh gallons per year in the seventies, it was reduced to 15 lakh gallons in the eighties though the total oil cargo at present shot up to 15 crore tons from 54 lakh tons in the fifties.

Mr Kamaluddin Chowdhury in his speech said sea is our part of life, but lamented that yet we are unable to tap its resources and are ignorant about its many aspects.

He deplored the reduction of Bangladesh sailors abroad for non-skillness. Mr. Chowdhury called upon the relevant authorities to impart upto-date training to seamen to match the global seas. He lauded, UNDP efforts launched to train seamen.

CLASH BETWEEN MINING INDUSTRY, CONSERVATIONISTS FORESEEN

Christchurch THE PRESS in English 30 Sep 82 p 16

[Article by Oliver Riddell]

[Text]

One industry from which New Zealand is expecting to profit in the next 20 years, and to secure much of its energy supplies, is mining. This has resulted in an increase in applications for exploration and prospecting licences. The mining licensing system is bursting at the seams trying to cope.

In the background, but dominating the actions of everyone involved in the licensing process, is looming a major confrontation between developers and conservationists. This struggle has existed for many years. It has been slow to develop here because so much of New Zealand was still unspoiled, and because New Zealand's mineral resources are small by international standards. Accordingly they have been slow to attract international investment in the face of competition from larger mineral deposits.

The surge in gold prices three years ago, along with predicted shortages world wide in some minerals in 20 years time, have changed attitudes towards investing in New Zealand minerals. Allied to this is the keenness of the New Zealand Government to develop the coal reserves for energy production and for export.

Already on the West Coast and at Coromandel conservationists and farmers have confronted the Government and multi-national mineral giants. Most of the struggle so far has been about rights to explore and prospect; the heat will get really fierce when the struggle is about extraction. As native timber was the main conservation issue of the 1970s, and water looks likely to be the

major issue in the 1980s, so minerals may be the major issue for the 1990s.

Mining is not a field in which the opposing sides have much goodwill for each other. At a conference of the Australasian Institute of Mining and Metallurgy in Wellington, one leading mining figure observed sourly that the mining industry was suffering from undue public attention. Amended mining legislation last year at least provided clearer ground rules for miners and their opponents to contest applications for exploration and prospecting licences; when the mining licence applications begin the Government will need to have decided what rules are to apply there too.

The filling in the mining sandwich is the Mines Division of the Ministry of Energy. Speaker after speaker at the conference made claims about what the Mines Division was doing wrong, and how it could do the right thing. These claims almost all cancelled each other out and were mutually exclusive. At the same time, Mines Division staff spoke of pressure of work and the conflicting expectations people had of them.

The mining industry wants the Mines Division to become its advocate - to the Government, among other officials, and in promoting mining to target groups of the public through special publications. The Mines Division has often been accused over the years of doing this anyway, but its more even-handed approach in recent years has muted criticism from conservationists. However, the result has been that

some mining interests have come to see the Mines Division, or at least some of its staff, as opponents to mining whose antagonism needs to be overcome.

The Mines Division is in a bind. It not only has to deal with the competing interests of miners and conservationists, as part of its statutory functions, but it is also New Zealand's biggest miner itself. This last function is a further source of conflict with both other miners and conservationists.

Law changes will be sought by the mining industry to remedy not only what it sees as emerging defects in the amended mining legislation, but also to reduce the impact of some of the effects of the legislation which are frustrating mining development. Miners want a sort of mining National Development Act, which will shorten the procedures needed before mining, and are confident of Government support.

Miners expect to work together a lot more closely in the future in a public relations campaign. This is to convince the public of the merits of mining, and so will aim to educate the public generally as well as influence specific groups of people over specific development projects.

Mining will become much more political in the future. This was the clear message from the conference, and is a result of the increasing confidence the mining companies feel in themselves, their product and their future in New Zealand.

NEW ZEALAND

BRIEFS

HYDROPOWER PROJECTS--Environmental groups and acclimatisation societies must be fully informed of intentions to develop hydroelectric power schemes in future, the Minister of Energy, Mr Birch, told the annual conference of the Electrical Supply Authorities Association yesterday. A local supply authority wanting to develop a scheme must send to the Commission for the Environment, the regional water board and the territorial local authority all the information relevant to the proposal. [Excerpt] [Auckland THE NEW ZEALAND HERALD in English 23 Sep 82 p 1]

CSO: 5000/9080

SOURCES OF MERCURY CONTAMINATION EXAMINED

Beijing HUANJING KEXUE XUEBAO [JOURNAL OF ENVIRONMENTAL SCIENCES] in Chinese
No 3, Sep 82 pp 229-240

[Article by Hu Gualian [5170 0948 1670]: "Transformation and Migration of Mercury in Geological Pollution Sources"]

[Summary] Mercury contamination caused by apparent increase of Hg content in soil, air, and near-surface ambient air has been observed through mercury-enriched rocks and ore bodies even at a depth of 300 meters or beneath a thick, up to 160 meters, overburden. This paper briefly discusses the relation between transformation-migration process of mercury-bearing sulphides and pollution sources. Mercury exists in various chemical forms in geological bodies. However, it has been proved, under both laboratory and natural conditions, that it can transform into a gaseous phase and in a soluble form migrate through porous rocks and fractures. According to results from experiments and the theory of electrochemical dissolution of minerals, it is further deduced that transformation-migration of mercury in sulphides is related to mercury content and its form, mineral association, chemical property and activity of underground water, and development of migration channels. Soluble mercury would migrate in long distance via the form of a stable complex under existence of high level chloride in underground water. By means of continuous accumulation, organic substances, ferric oxide, manganese bionoxides, and clay minerals in soils all exert an important influence on supergene enrichment of mercury in the upper layer of soil profiles.

6248

CSO: 5000/4105

RESULTS OF STUDY OF WASTEWATER-IRRIGATED SOIL RELEASED

Beijing HUANJING KEXUE XUEBAO [JOURNAL OF ENVIRONMENTAL SCIENCES] in Chinese
No 3, Sep 82 pp 266-269

[Article by Chan Tao [7115 3447] et al., of Research Institute of Forestry and
Pedology, Chinese Academy of Sciences: "Study on Cadmium Forms in Wastewater-
Irrigated Soil With $^{115} + ^{115m}\text{Cd}$ "]

[Summary] Experimental results were obtained by using tracer of $^{115} + ^{115m}\text{Cd}$
after the method of Yoji Sonoda and Silvera, D.J. Soil samples were collected
at 2 wastewater irrigated areas, one being acid meadow brown soil in Shenyang,
and the other solonized light meadow soil in Tianjin. Experimental results are
summarized as follows: (1) 54 to 74 percent Cd exists in exchangeable form
in these soils; (2) the rate of alkali-soluble form is increasing and the rate
of exchangeable form is decreasing with increase of pH. This is in accord with
results of Yoji Sonoda; (3) for extraction of available form of Cd in alkaline
soil, a 0.005M solution of DTPA is preferred, because extraction is not complete
with 0.1N HCl by Yoji Sonoda.

6248

CSO: 5000/4105

OPPOSITION PARTY RAPS GOVERNMENT OVER INACTION ON LITTER

Nassau THE TRIBUNE in English 22 Sep 82 p 1

[Article by Marcia Bethell]

[Text]

THREE GOVERNMENT Ministers were heavily criticised yesterday by members of the FNM for allowing the area under the bridge to become an 'unsanitary health hazard' and for also ignoring suggestions made by the FNM for a clean-up plan for the area.

Three members of the opposition party, including the leader Kendal Isaacs, Pierre Dupuch and Jimmy Knowles made a tour of the area yesterday afternoon noting the unsightly mess and talked with some of the fruit vendors and fishmongers in the area. They condemned the Minister of Works, Loftus Roker, the Minister of Health, Livingstone Cookley and Minister of Fisheries George Smith, for allowing the area to become a "disgrace" for tourists as well as Bahamians.

Pierre Dupuch, FNM representative for Shutea and shadow Minister for Health, said yesterday that shortly after being elected to the House of Assembly he wrote a letter to Mr Roker regarding the unsightly and unhealthy conditions which exist at the bridge and surrounding area.

In Mr Dupuch's letter, dated June 30th, 1982, he pointed out to Mr Roker that Paradise Island Bridge is the "gateway to our largest tourist resort, namely Paradise Island."

"I am sure," he wrote, "that you appreciate the importance of keeping our island, and particularly our showcase areas, clean."

Mr Dupuch suggested to Mr Roker that the empty conch shells which litter the docks and sea area be moved. That proper garbage receptacles be placed strategically in the area so that garbage can be secured for removal on a daily basis by garbage trucks.

He also suggested that proper tables (either wood, cement or tile) be constructed with running water so that the fishermen and vendors could sell their produce in sanitary, presentable and convenient surroundings.

Also, that toilet facilities for use by the general public, be constructed under the bridge and that derelict boats be removed from the area.

In regards to the reclaimed area just east of the bridge, Mr Dupuch suggested to Mr Roker that grass and other Bahamian trees and flowers be planted there, "thus creating a park where tourists and Bahamians alike can enjoy the true beauty of the Bahamas."

But yesterday Mr Dupuch said that it was obvious that Mr Roker ignored both his letter and his suggestions.

"From all angles this area is a total disgrace. This area is filthy, the garbage and stench attracts

rats and flies, and besides creating a health hazard for Bahamians it is also an eyesore for tourists" Mr Dupuch said.

Mr Isaacs, who said that yesterday was the first time he had taken a good look at the area, said that the conditions left much to be desired.

"We will continue to take action against this until something is done," he said. "This area is not the only unsightly area in New Providence. Bay Street is almost as bad," he said.

Mr Isaacs said the FNM will continue to write to the Ministers responsible for cleaning up the area and will also bring it up in the House of Assembly.

"And through our combined efforts with the Press we hope to shame the government into doing something about it. We will also be making regular

tours such as this one in the future," he said.

The FNM representative for Clarence Town and Shadow Minister for Agriculture and Fisheries, James Knowles, said that on two occasions in the House of Assembly he had urged that efforts be made to clean up the area.

"I suggested to the Minister of Fisheries, George Smith, that proper facilities be

provided for the vendors and fishmongers in the area and that these facilities be maintained on a regular, orderly basis. This will make the whole area appear more neat and tidy and make it more of an attraction to tourists," he said.

Mr Knowles said that the lack of facilities on the dock contributes to the disorderly appearance "of the area and the unhygienic conditions."

Mr Knowles said that he also invited Mr Smith to look into landscaping the reclaimed land to the east of the bridge, "so that it would look more attractive and not be a depository for garbage."

"I call upon the Ministers of Health, Fisheries and Works to immediately remedy the unsanitary conditions in this area in the interest of the

tourist and the health of the Bahamian people," Mr Knowles said.

"This cannot be allowed to continue," he said. "God forbid that we should ever hear the reaction of a tourist on seeing this place and what they tell their friends back home about the Bahamas."

CSO: 5000/7505

BRIEFS

GOVERNMENT ENVIRONMENTAL FUNDS--Minister of Housing and Lands, Mr. DeLisle Bradshaw, has said he plans to recommend to the Cabinet that money be made available on an annual basis to environmental interest groups. Speaking at the official opening of the Art Exhibition of the Environment held at the Barbados Museum last Saturday, he said the Garrison Committee (an offshoot of the Keep Barbados Beautiful Committee) was to be saluted for its concern and interest in the Garrison area. He congratulated the Committee on its work, and he urged that other groups follow its example and initiate committees to clean up and preserve the communities in which they lived. Mr. Bradshaw also noted that the Committee's work meshed well with an idea he has proposed to the Prime Minister, regarding the implementation of policies where people would blend in with the environment in which they were living. He said the Garrison Committee was aimed at preserving the Garrison and the surrounding area, and he proposed to recommend to Cabinet that money be made available annually to this type of group so they could better carry out their function. "Everyone in Barbados," he said, "would benefit from this by having a better environment." He hoped the Garrison Committee would concentrate on getting rid of the thoughtlessly dumped litter around the area, and to deal with the "mobile canteens" set up around the area by removing them, because, he said, "they are unsightly." [Text] [Bridgetown ADVOCATE-NEWS in English 28 Sep 82 p 6]

CSO: 5000/7505

STUDY DONE ON INSECTICIDE CONTAMINATION IN COUNTRY

San Jose LA NACION in Spanish 13, 14 Sep 82

[Article by Mayra Porras]

[13 Sep 82 p 1B]

[Text] The problem of accelerated destruction and the misuse of natural resources are evident for any observer: Eroded soils, deforestation and contamination of the air, the water and the land.

The rapid wasting of our planet has caused numerous investigators to carry out studies to determine the effects of the mishandling of those resources on the quality of human life. The irrational use of insecticides has not escaped exhaustive analysis in Costa Rica either; two specialists dedicated themselves to establishing the degree of accumulation of organochlorate-insecticides in man.

These substances are composed of carbon linked with various numbers of chlorine atoms, and they are characterized by remaining in the environment for a long time. Thus, it has been demonstrated that living organisms accumulate this type of insecticide received by various means, so that they quickly reach very high concentrations.

The investigators are Dr Manuel Constenla, chemist, and Mercedes Barquero, Master of Science, both members of the CICA (Environmental Contamination Research Center) of the University of Costa Rica. Both found residual organochlorates in human adipose tissue in quantities five times higher than the norm for the rest of the world.

To give an example of the level of contamination, Dr Constenla says about DDT: "It is difficult to prevent the worldwide dissemination of an organochlorate-insecticide such as DDT. The fact that its principal method of application consists in pulverizing it into minute particles that float in the air guarantees that a large part of it will be carried by the wind to any zone."

In this manner, highly concentrated dust of organochlorate-insecticides is found in houses within areas where they have not been applied.

Regulation

Although Costa Rica's Plant Health Law regulated the use of that type of insecticides, their use is still permitted for combatting certain plaques and the malaria carrier vector. In the case of the latter, the program for combatting the disease was organized in 1957, using as the principal means of attack the spraying of homes every 6 months with DDT.

For malaria control the country is divided into two areas: the nonmalarial area, situated at an altitude of more than 500 meters above sea level, and the malarial area below 500 meters. Inevitably we Costa Ricans are exposed to the action of that insecticide, because as it was said earlier, the rain carries it toward the rivers and the oceans; it also evaporates into the air and is transported by the wind.

The situation is more critical for those who are in direct contact with the insecticides, as in the case of farmers. They, in addition to inhaling "their due quantity" in their homes, have a considerable additional portion in the fields where they work.

The major problem is that currently it is difficult to seek options other than insecticides for the plaques, and that is especially true for DDT. Nevertheless, for some time the CICA has been working on the "technique of sterile males" by radiation in an attempt to replace insecticides in combatting malaria.

This system consists in sterilizing the male anopheles mosquito and releasing it, which diminishes female fertilization.

"In principle this technique should be used in conjunction with a fumigation," explains Dr Constenla, "nevertheless it could be the solution that we are looking for to avoid the poisoning that we are suffering."

Effects

In human beings one of the primary effects of the chronic ingestion of organochlorate-insecticides is their deposit and storage in adipose tissue (fat). There is still insufficient data to permit establishing a definitive relationship between this storage and individual pathological states.

In regard to permanent toxic effects, it is known that the concentrations of insecticides in the blood are related to total deposits in adipose tissue and that in circumstances in which there is a sudden mobilization of fat, for example, in conditions of tension, effort or rapid weight loss, there is a simultaneous transfer toward the blood of insecticides and other chlorate components that had been stored in the fat.

It has been proven that this mobilization can have lethal effects in wild animals, but as yet there is no proof that something similar occurs in human beings.

In addition to being deposited in fatty tissue and in the liver, the insecticides accumulate in the brain, gonades, pancreas and other parts of the body. The consequences vary and more studies are needed in this regard. Nevertheless, it has been demonstrated that the organochlorates interfere with the normal functioning of the different organs.

"It should be made clear that there is no relation between cancer and the concentration of these chemical substances in the body, as is determined in research."

The Study

The objectives leading to the development of this analysis were those of determining the concentration of organochlorate-insecticides in the fatty tissue of Costa Ricans, of establishing which insecticide occurs most frequently and of comparing the results in different geographic zones of the country.

To achieve those objectives 82 fat samples were taken during surgical operations performed on an equal number of patients in 16 different hospitals in the country, in accordance with the distribution used by the Costa Rican Social Security Office.

The samples were collected in a very special manner to avoid contamination that could falsify the results.

The method used was that a gas chromatography, which consists of separation and quantitative detection of residues. All of this work was carried out in the installations set up for that purpose at the University of Costa Rica.

It is interesting to note that the fatty samples come from 55 men and 27 women, whose ages ranged from 11 to 81. The patients were not selected according to any special criterion, but in a random manner.

In this way, 12 insecticides and 2 transformation products were studied, as well as aldrin, which was not found in any sample, since it is rapidly changed into dieldrin or is quickly eliminated through the bile.

[14 Sep 82 pp 1B, 7B]

[Text] Although the use of some insecticides has been regulated for some time, the concentration found in the patients are alarming, especially in regard to DDT.

One of the most representative cases illustrating the possibilities that exist on coming in contact with these chemical substances is that of a farm laborer, who has 403.3 milligrams of insecticide in his body's fatty tissue per kilogram of weight.

"He is a living insecticide container," Dr Constenla states categorically.

Results

Of the 82 samples, 80 showed residue of hexachlorobenzene (HCB). The only patients not having it were an 81-year-old farmer and a woman domestic.

"It is difficult to explain the absence of the product in those persons," says the specialist, "because it is currently being used as a seed fungicide and formerly it was added to plastics as a flame-retardant substance."

He adds that HCB is a highly stable substance, it is persistent and considered to be an omnipresent contaminant.

On the other hand, there is little Lindane residue. This is easy to understand, since its use in Costa Rica is very limited. There were only 190 kg imported in 1980, according to data by the Ministry of Agriculture and Cattle.

In the case of the heptachloride, as could be expected, it was found in only five samples and its residues were very low, since it is transformed into another substance: heptachloride epoxide.

This product did show values very much higher than those reported for the United States, Great Britain, Italy, Holland and Canada.

"This is not surprising, because 2 years ago 9,163 kg of the substance were imported, and it was assimilated through the diet and through animal products, where it was transformed."

It is used very extensively in combatting ants and other ground insects, as well as in treating the foliage and in the extermination of the "wire" worm so well known in our region.

But the most alarming results are those found in DDT residue. This is a rather stable compound that in almost all organisms is metabolized and converted into DDE or DDD.

The accumulation of this substance or its derivatives occurs through chronic ingestion and persists because it is very soluble in fat and very insoluble in water.

The average concentration of DDT and its derivatives is 33.16 milligrams per kilogram of weight and it is very much higher than that found in other countries.

"The total level may be five times greater than the world average," according to the opinion of Dr Aladin Hassan, expert with the International Atomic Energy Agency.

Distribution

The study demonstrated that the men and women of the rural area show a higher concentration of DDT in their fatty tissue than individuals living in urban areas.

"This is because apart from the insecticides that they ingest, in the rural area they are more exposed to the fumigation that formerly was used on crops. Also, DDT is currently being used to control malaria in those sectors."

In addition, it could be determined that in general agricultural workers are the patients with the highest concentrations of organochlorate-insecticides and that the first six places are occupied by peasants from Alajuela and Limon.

Also noted is the large difference in the average for women domestics, who show 21.76 milligrams per kilogram of weight and the farm workers' average of 58.32 milligrams.

"Doubtless, aside from ingestion and absorption through home fumigations, agricultural workers are more exposed to the action of these substances because of their occupation."

In general, DDE and DDT were the compounds found in the greatest concentration in the adipose tissue of Costa Ricans, and this study demonstrates how the level of organochlorate-insecticides varies in the different zones and how it differs with respect to other parts of the world.

"Here it was noted how man, being at the end of the food chain, accumulates large quantities of those residues in the fatty tissues when these products are used intensively over long periods."

This analysis gives determinant results; nevertheless, Dr Constenla believes that it would be desirable if future research would find a regressive evolution in the level of insecticides, given the fact that in Costa Rica the use of DDT was limited 2 years ago.

Future policies

Due to the consciousness that now exists on the damage caused by the indiscriminate use of organochlorate-insecticides, various institutions and associations are carrying out various programs to educate the population on what this field is all about.

One of the interested organizations is the Advisory Commission for the Use of Insecticides, composed of the Ministries of Health, Agriculture and Labor, of the University of Costa Rica, professional societies for veterinarians and agronomists and the private industry.

Its president, Carlos Alberto Soto, assistant head of the phytopathological department in the Ministry of Agriculture and Cattle, explained that work is being done on a new decree supporting an almost total prohibition of the importation of organochlorate-insecticides.

"In this manner, although we may not say that they cannot be used, this will be impossible if they cannot be obtained."

Also, the vice president of the mentioned association, Mr Evaristo Morales, who at the same time is head of the entomology department of the same ministry, affirms that among the short-term objectives is the establishment of an information program on the use of those substances.

"Education should be permanent, since the most important thing is not to prevent the use of insecticides, but that people know how to use them properly."

In this regard Mr Evaristo is in agreement with Dr Constenla, who believes that good education and technical advice would be the solution to the great contamination that we now suffer.

9746

CSO: 5000/2002

BRIEFS

FORESTRY PROGRAMS--\$1.1 million will be channeled through OFIPLAN (National Planning Office) to carry out forestry programs. To carry out forestry projects the country continues to need technical assistance, from the development of investment projects involving the banking system to the administration of the tropical forest for agroforestry and energy purposes. This is the opinion of the group of consultants from the UNDP (UN Development Program) and the FAO, who evaluated the forestry programs, for which \$1.1 million has been allocated. Michael Stewart and Manuel Paveri from the UNDP and the FAO, respectively, held a meeting with Claudio Soto, vice minister for planning, along with the directors of the Forestry Directorate, to learn the results of the project evaluation. It was agreed that the project should be given a new orientation to achieve the desired goals in the forestry sector. Among other things, it was recommended that this project should be in effect for an additional 36 months and that some of the programs in the project be financed through the Preinvestment Fund administered by OFIPLAN. It was also considered opportune to provide institutional and technical strengthening and to push financing projects in this forestry sector. [Text] [San Jose LA REPUBLICA in Spanish 19 Sep 82 p 2] 9746

CSO: 5000/2002

NICARAGUA

ENVIRONMENT AGENCY TO IMPROVE PROGRAMS

Managua LA PRENSA in Spanish 8 Sep 82 p 11

[Article: "Revival of Wild Fauna"]

[Text] The first draft of the 1983 IRENA [Natural Resources and Environment Institute] budget is being prepared with a view to obtaining the funds needed to greatly improve a series of programs that presently are of major concern to that institution.

The above was reported by Enrique Garcia Caldera, IRENA spokesman, who confirmed that priority plans include protection of the fauna, the environment, the forest, natural resources, and the purity of sources of water.

Large tracts of land are being cared for and are part of a vast technical plan in various areas to protect the environmental and animal resources of the entire country.

IRENA at present has limited resources because of difficulties in the central government, but next year there will be greater coverage of programs having to do with forests, rivers, wild fauna, and resources of ecological concern.

Positive results are already being seen in this field, such as a substantial increase in wild fauna, deer, pacas, lizards, turtles, all kinds of birds, tapirs, wild boar, ocelots, wild cats, etc.

The major reserve sections are in the mountains of Matagalpa, Jinotega, Esteli, the Atlantica area, and the natural resources of 5,000 blocks at the Masaya volcano, where a national park has been established, to be maintained and organized by the recreation department of IRENA.

"Those who want to hunt as a sport in the national territory must obtain a license," said the spokesman, "but natural resources are not prohibited as a means of livelihood; that is, Nicaraguan peasants are not prohibited from hunting as a means of livelihood."

The above was made known in view of a report that in some sections of Siuna and Bonanza peasants were forbidden to hunt as a means of livelihood for their families.

"We do not prohibit this type of hunting, but we do forbid hunting by pillagers who abuse the use of guns and hunt in order to trade in and export hides," said the spokesman.

IRENA is also evaluating the damages to agriculture experienced as a result of the long drought. In this connection the harm done to the fauna will be made known, said the spokesman.

The long drought can damage the ecological environment and harm the fauna as a result of the scarcity of uncultivated nourishment, as well as the water that is so necessary for the maintenance of animal life in the national forests and mountains, concluded the spokesman.

8255

CSO: 5000/2000

BRIEFS

SHIP POLLUTION MONITORED--A squad of four Mystere planes will be allocated to control the malpractices of ships polluting the Red Sea waters. They are to detect ships washing their fuel tanks in sea water. This violates the provisions of the international treaties organising the use of seas and is one of the principal causes of water pollution. This was explained by the Deputy Prime Minister for Defence and Military Production Field Marshal Abdul Halim Abu Ghazala who said that the planes would operate within the framework of an agreement arranged with the Ministry of Petroleum which is also involved in handling the problem. The Petroleum Ministry he said, was willing to allocate the sum of LE 10 million to detect such practices and so prevent pollution in the Red Sea. Ships discovered emptying their tanks would be fined \$500,000 thus covering control costs officials at the Petroleum Ministry said. [Text] [Cairo THE EGYPTIAN GAZETTE in English 1 Oct 82 p 3]

CSO: 5000/4602

MINISTER CHIEPE WORRIED ABOUT MOCHUDI'S WATER SHORTAGE

Gaborone DAILY NEWS in English 3 Sep 82 p 2

[Article by Larona Sedimo]

[Text]

THE PROBLEM of water shortage which Mochudi is experiencing has become a disturbing feature in most of the major villages, said the Minister of Mineral Resources and Water Affairs, Dr Gaositwe Chiepe, in Parliament on Monday.

Dr Chiepe admitted that she was aware a second generator was required to bring to normal the water situation in those villages.

The Minister made the remarks when answering a question from the MP for Mochudi, Mr Greek Ruete, who had asked what steps were being taken to remedy the water situation in the villages. The MP also said this was a result of the drying up or low yield of the existing boreholes and the continuous bursting of reticulation pipes due to the poor materials used.

The Minister however, explained that regarding Mochudi, steps have been taken to find a solution to the problem and that as an initial move the borehole at Piane which was previously used for the Experimental Windmill Programme has been linked to the Mochudi system. "Trust", she said, "had slightly improved the

water situation in the village."

The Department of Water Affairs and the Department of Geological Survey, Dr Chiepe disclosed, jointly carried out a water survey in Mochudi to identify additional water resources for the village. She said drilling would commence as soon as funds were available for that purpose.

Dr Chiepe said that for the current fiscal year, her Ministry requested funds to the amount of P4.6 million for rehabilitation and expansion work in the major villages. This initial request, the Minister pointed out, could not be met until funds were provided through Domestic Development fund (DDF) because of the severe budgetary constraints that the country is experiencing at the moment.

However she disclosed that she had received indication that the Ministry of Finance and Development Planning (MFDP) would release P1 million from the DDF to attend to the most urgent cases.

Mochudi, Dr Chiepe said was one of the villages under active consideration for the emergency programme.

BOPA

CSO: 5000/16

NEW BOREHOLES MAY EASE WATER SHORTAGE

Gaborone DAILY NEWS in English 9 Sep 82 p 2

[Article by Keefelakae Tolse]

[Text]

THE DEPARTMENT of Water Affairs in Gaborone, on Monday started drilling five more new boreholes in Mochudi in a bid to rescue the critical water shortage situation that has hit the village.

A team of drillers were by Monday already drilling the first borehole in the eastern part of the village. The team is reported to be using a modern rig which the drillers said can sink at the rate of a 40 to 50 metres depth per 24 hours on favourable sites.

The move was a response to an urgent appeal from the Minister of Agriculture, Mr Washington Meswale and the District Commissioner Mr I.L. Zobe.

Mr Zebe told BOPA that the village has been reeling from water shortage for the past two months. He said the situation has been moving from bad to worse.

Hospitals, Schools and Government buildings which use water system toilets are reported to be the most hard

hit. And some development projects are said to be at a standstill.

Mr Frank Kganane, Officer in Charge of water supply in Mochudi, explained the cause of the shortage as being the very low yield of the existing five boreholes that supply the village.

He said most of the boreholes have gone dry and further added that the situation was aggravated by continuous break-downs and pipe bursts.

At the moment, major replacements of new and better quality pipes are being undertaken, Mr Kganane asserted.

The drilling team is concentrating on 20 water points in Mochudi surveyed by the Geological Department, one of the drillers, Mr Brumane Mmanasei, revealed.

More boreholes will be drilled at Ramotlabaki, Dikwididi and Mmathubudukwane village in Kgatleng.

BOPA

BRIEFS

PALAPYE RELIEF PROJECTS--The Central Government has allocated close to P22 000 for labour based drought relief projects in Palapye, the Vice Chairman of the Village Development Committee, Mr Lucky Maforaga, disclosed in a meeting last Thursday. The meeting, whose main purpose was to finalise preparations for the Palapye area programme decided that Senior Tribal Authority, Mr Raditanka Ntebele, should call a kgotla meeting today to inform the residents about the programme which is scheduled to start on Monday September 13. Most of the Palapye labour based projects were approved by the main Drought Relief Committee in Serowe except the housing project. Out of the requested 30 houses, to accommodate the increasing number of Government employees in the area, only eight were approved. Mrs Ruth Kgomela, the Palapye VDC secretary announced that the food rationing programme for the destitute and the disabled was also due to start. The meeting also heard of the slow progress being made in the construction of rondavels owing to scarcity of thatching grass and poles. BOPA [Text] [Gaborone DAILY NEWS in English 9 Sep 82 p 3]

MOCHUDI BOREHOLE--Water tests were to be carried out in Mochudi last Wednesday after water was dug in the eastern part of the village. This follows an extensive search after the Kgatieng had experienced an acute shortage of water. A water rig was rushed to the village on Monday and after seven hours of drilling water was struck at a depth of 48 metres at Boseja ward in the eastern part of Mochudi. The water was found at one of the five sites that had been surveyed. One official who was involved in the drilling operations said in an interview that the new borehole would help to alleviate the water problem in the village since water was now being pumped up at a rate of 90 to 100 litres per minute. BOPA [Text] [Gaborone DAILY NEWS in English 17 Sep 82 p 1]

RELIEF PROJECTS HALTED--Drought-relief based projects have been halted in Kweneng East because there are not enough funds available. This had been disclosed by Kweneng District Council's Planning Officer, Mr Calvin Kgalewang. He told me in an interview, that a project memorandum has since been submitted to the Ministry of Local Government of Lands requesting urgent funds. Earlier, desperate villagers had appealed to the Minister of Mineral Resources and Water Affairs, Dr Gaositwe Chiepe--who was touring the district together with MP Mr David Magang and other officials--to urge the Ministry of Local Government and Lands to speed up with their wages for

working on drought-relief projects. Villagers complained that they had worked without pay, for up to three months in some villages. Some of the angry villagers threatened to send a delegation to the Kweneng District Commissioner or Council, to demand their wages. Villagers also complained over water shortages which had hampered other development projects. Livestock was also dying, they said. For example, a teacher from Metsemotlhabe School disclosed that the school was buying water at P2 per drum from motorists who brought water from Mogoditshane. The villagers were however given an assurance by the Minister, that some of their villagers have already been earmarked for water drilling operations. BOPA [Text] [Gaborone DAILY NEWS in English 17 Sep 82 p 1]

DROUGHT-RELIEF MEASURES--Lerala based extension team workers have been called upon to cooperate and share the limited Government resources for the welfare of the nation. The call was made by Sister-incharge at Lerala Clinic, Miss Ontse Lobelo, at a recent meeting summoned to elect a committee that will help speed up the implementation of drought relief measures. Miss Lobelo urged Government extension team workers to meet regularly and share ideas on how to combat drought effects in Lerala which is reported to be the most hard-hit area in that constituency. She further advised the new committee to draw a time-table to enable it to carry out their day to day activities and to coordinate sectional meetings under the supervision of Mr Show Roger, the local traditional leader. Agricultural Demonstrator for Lerala, Mr W. Kgoboki was elected vice-chairman, Assistant Community Development Officer, Mr Otimile Phuthago, Secretary. The meeting also agreed that the VDC and the PTA be helped in their drought relief efforts. [Text] [Gaborone DAILY NEWS in English 20 Sep 82 p 2]

CSO: 5000/16

BRIEFS

RIVER SOURCE IN DANGER--Embobut and Embolot rivers, which have their source in Embobut Forest of Elgeyo/Marakwet district, face a danger of drying up if steps are not taken to curb the destruction of the forest by the residents of Sambrir Location, the District Commissioner, Mr. Amwel Ambuka, said when he led the district forest licencing review committee to the forest to assess the destruction caused to it by the illegal squatters and unauthorised grazing. The committee, which toured a large part of the forest, estimated that about 5,000 hectares of forest had been destroyed and was now open grassland in what was once a thick forest. Addressing a meeting at Kaitamoi Sub-location after touring the forest, Mr. Ambuka, expressed his misgivings with the way the people of the area had resorted to the destruction of the forest thus endangering the lives of the people living in the Kerio Valley who depend on the rivers for their livelihood. If the two rivers dried up as they might do during the dry season, then the work of the Kerio Valley Development Authority would not succeed as the projects depended on water from the rivers, he said. The D.C. ordered the chief of the area and his assistant chiefs to ensure that all the people who were not authorised to graze or live in the forest moved out immediately. [Text] [Nairobi THE STANDARD in English 25 Sep 82 p 5]

CSO: 5000/17

WARNING ON LAGOS FLOODS SHOULD BE HEEDED

Lagos DAILY TIMES in English 23 Sep 82 p 7

[Article by Lucas Adefemiwa]

[Text]

THE damage to buildings, roads and personal property from the floods of the early rains of the year was so telling that residents of the Lagos metropolis started wondering, at a stage, what would become of the city when all the rains of the year might have fallen.

However, a drought has been on since early July and Lagos has thus been saved of a major flood disaster that would no doubt have resulted from the heavy down pour of the last three months.

But lest we forget in the sudden relief brought about by this year's unusual drought, it is pertinent to state here that the flood situation of June this year would repeat itself in a more monstrous form unless the authorities concerned act with despatch to open up the drains in Lagos before the next wet season.

For though the rains have since stopped and the storm has since ceased, certain parts of the city are still very much in bad shape and the residents of these affected areas are yet to recover from the initial shock.

Prominent among such badly hit areas is Shogunle, a heavily populated area of the Lagos metropolis, lying along the Agege Motor Road.

At the height of the heavy torrents of last June, Shogunle was very much in the news because here, in fact, the floods actually took their toll on both public and private property.

And while markets and schools were being abandoned and private homes were being hurriedly vacated, the inhabitants of this flood-invaded layout made several representations to the Lagos State Government but only to be told on each occasion that a giant drainage system is in the pipeline and that the residents of Shogunle might as well wait for the completion of the said city-wide giant drainage.

But the fear of the afflicted people of this area is not allayed by such an ambitious drainage plan because the plan would take quite some time to materialise and secondly the problems of Shogunle may, after all, not be solved by the plan.

The proposed drainage system may not rid Shogunle of floods for

a day because the wastes flowing into the area are man-made rather than coming from any natural causes.

During a recent survey, I gathered that Shogunle is the area to which the jetsan and floatsan of the Government Reservation Area (GRA), Ikeja flow. I was told that this same layout is the outlet for the wastes and debris of the Murtala Mohammed International Airport.

And for these reasons, the residents of Shogunle told me during the interview, that the Lagos State Government should come the aid of this community through an emergency relief plan for the construction of drainages in the area rather waiting for the city-wide plan to hatch.

If this suggestion is not taken seriously, warned the inhabitants, the day might come when the whole of location would be washed away by floods.

I have also been told that officials in the Lagos State Ministry of Environment are ungeographical people who were said to have had trouble about the exact location of Shogunle during one of the delegations led by the people to the ministry.

RAIN BRINGS RELIEF, DROUGHT BROKEN IN SOME AREAS

Johannesburg THE CITIZEN in English 13 Oct 82 pp 1, 2

[Text]

SOAKING rain has brought relief to several drought-stricken areas of the country, but hail has caused serious damage, estimated at several million rand, in the lower Orange River area in South West Africa.

On Perde island vineyards and crops over an area of about 12 000 hectares were flattened and damage is expected to total about R6-million. It is feared that farming will be affected for at least three years.

This year's grape harvest in the area, estimated at 20 000, has been destroyed.

In parts of South West Africa up to 100 mm of rain was recorded, and in the Stampriet area, hail lay a metre deep on the ground. Some sheep were reported killed by the hail, and wind storms caused damage in several areas. Soaking rain fell over a wide area.

Weakened

Rain fell over the greater part of the Transvaal on Monday night and yesterday morning, and the grip of the drought weakened over large parts of the province. The dry north-western Transvaal has had fairly general rain, but a spokesman for the Lich-

tenburg co-operative said it was not sufficient.

Rain fell during Monday night over parts of the eastern Cape bringing temporary relief to the region, but more rain is needed to break the drought. The south-eastern Cape has also had soaking rains.

Several areas in the north-eastern Cape had their first spring rains and in the Lady Grey district between 25 and 40 mm was recorded.

Good falls

The drought-stricken Karoo and Namaqualand have also had good falls and in east Bushmanland, where it last rained about six years ago, up to 30 mm was measured.

It is reported from Durban that soaking rains fell over most of Natal during Monday night, bringing relief to the maize growing areas of northern Natal, with some areas recording up to 40 mm.

Rain continued to fall over a wide area yesterday and more is forecast by the Weather Bureau.

Most of Natal has been saved from imminent disaster by the rains and even normally dry-as-dust thornveld areas such as Weenen have

had good rains.

Nick of time

Thornveld farmers said that the rains had come in the nick of time as the cattle, goats and donkeys had eaten up all the grass and were largely subsisting on browse from trees.

The rains brought relief to the Ladysmith area where some farmers had been forced to cart water to stock. Farmers said they would now be able to plant.

Mr Chris Mann, of the Valley Trust Institution, near Botha's Hill, said they were having the best rains for the past two years.

In farming areas like Bergville enough fell to liven the veld and some farmers started to plant yesterday.

Far northern and southern parts of Natal, Vryheid and Kokstad, had less rain but conditions are no longer critical.

Cedra has had 23 mm this month whereas the average for October is 83 mm.

Heavy

The weather bureau reported heavy precipitation from the Little Karoo, where Fraserburg, with 45 mm, had the national record rainfall for the 24-hour period ended at 8 am yesterday.

Many other parts of the Cape Province also received their share of the wet bonanza.

Despite the rain drought conditions continue in many parts of South Africa and have begun to assume far reaching economic implications.

Agricultural production is expected to decline by up to R700-million this year.

The chairman of the Jacobs Committee of inquiry into the agricultural sector, Dr Japie

Jacobs of the Reserve Bank, estimates that agriculture's contribution to the country's total production this year will be down by between 10 and 15 percent.

On last year's figures this means a reduction in gross farming income of between R450- and R700-million. There have been marked reductions in all of the country's main summer crops.

CSO: 5000/15

CONDITIONS IN DROUGHT-HIT BOPHUTHATSWANA DESCRIBED

Johannesburg SOWETAN in English 8 Oct 82 p 4

[Article by Monk Nkomo]

[Text]

THE DRIVE on the dusty road into the drought-stricken villages of Bophuthatswana near Ga-Rankuwa, brings you face to face with a pathetic sight of scores of women who say they spend up to two weeks without washing due to the growing critical shortage of water.

They also spend more than two weeks wearing the same clothes because there is just no water to wash their clothing.

"You better have nothing but water," said a worried-looking Mrs Elizabeth Marobela, an elderly mother of eight, when **The SOWETAN** visited Kgabalatsane this week. The whole family, including the four who are still at school sometimes washed with the same water used by her husband who leaves for work at 4 am. "We sometimes spend up to two weeks without washing," she said.

Tired-looking and sitting on an empty 25 litre container, and waiting in the long queue to get water from the water pump, Mrs Marobela said: "We pray everyday for God to help us. Right now I

am dizzy because of hunger and the scorching heat. I came here to queue for water at 5 am, and have not had anything to eat because there is no water to cook with. Unless it rains, we are all going to die of thirst."

The five affected villages — where landowners are making huge profits by charging up to R2.50 for a drum of water — are Kgabalatsane, Ramogodi, Rabokala, Hebron and Winterveldt.

Mrs Maria Padi, who said she had joined the queue for water at 5.30 am, said: "I have now spent two weeks in this brown dress, without washing. Man, I tell you we are suffering and the situation is terrible. I really do not know what to do with my five small children

who last washed two or three weeks ago. The whole family stinks of the sweat. Our only hope is God."

Scores of women waited impatiently at the water pump. The only pump in the village. Some drew dirty water from a dirty well nearby. It did not matter what the water was — polluted or not.

Others carried their babies on their backs. Some sat inside wheelbarrows while others — three or four at a time — were sweating, pumping water. A pathetic sight indeed.

"It is amazing that we have not yet been victims of the cholera epidemic," they said. "The Bophuthatswana Government must do something about this critical situation otherwise we are all going

to die."

Holding her four-month-old baby daughter, Muriel. Mrs. Lorette Nguni said her baby could not be washed or fed with baby foods because of the shortage of water. "I only breast-feed her. My husband, Isaac, sometimes goes to work without having washed. This is the worst suffering we have ever encountered in our lives. Water — the most important thing in life."

The scores of women were happy when a Johannesburg micro-biologist, Dr. Leon Buchan, expressed his humanity by freely giving them about 250 tablets designed to purify the dirty water drawn from the well.

Dr. Buchan, who is working for a major chemical factory, urged the Government of Bophuthatswana to buy the tablets because they could cost more if sold at the chemists. Each tablet had been specifically designed to be immersed into a 20 or 25 litre container.

Unless it rained, the survival of the large population of these areas depends on the mercy of the Almighty. All because of H₂O — the scientific name for water — the lack of which has created misery for the Bophuthatswana citizens.

HWANGE'S CAME REPORTED DYING OF THIRST

Johannesburg THE CITIZEN in English 18 Oct 82 p 9

[Text]

HARARE. — Scores of animals are dying in the Hwange National Park and thousands more are expected to perish in the next month during the worst drought in the area's recorded history of 65 years.

The provincial warden there, Mr Ron Thompson, said the park's 20 000 elephant, 10 000 buffalo, 65 black and 65 white rhino's, as well as more than 500 lion's, were just some of the animals affected by the lack of water.

"There is simply no grass left in the park and this month the temperatures will rise considerably. There are still four weeks left before the rains break. So thousands of animals will die," he said.

Annual rainfall in the area normally averages

about 865 mm, but only 330 mm fell last season.

However, nearly 50 mm fell last week and sprouting grass showed signs of greening.

The park, Zimbabwe's largest, borders on the Kalahari Desert and its sands do not store water well.

Most of its pans are watered by boreholes, some of which are 1 000 m deep and have pumps which are more than 40 years old and break down very often.

But relief is coming to the area. Four pumps and engines, to be installed at major watering points which have no supply at all, arrived in Harare last week.

They are the result of an appeal from the Conservation Trust of Zimbabwe to help save the

drought-threatened animals.

The trust's director, Mr John Pile, said the pumps would be working next week.

"The next stage is to re-furnish 35 pumps in the park which are dicey and we already have three units available for this effort."

In the south of the park, near Tsholotsho, there were many seeps where elephant dug up water.

"But the problem is that while the water is at first near the top of the ground, the level quickly drops and then the baby elephants' trunks are not long enough to reach it.

"That's when they start dropping down and dying," Mr Thomson said. — Sapa.

TOUGH RULES FOR TRANSPORT OF POISONS PLANNED

Johannesburg THE STAR in English 25 Sep 82 p 3

[Text]

South Africa is to get legislation governing the transport of dangerous substances.

The need for such a step was highlighted this week when a consignment of more than 500 kg of the deadly poisonous gas, methyl bromide, went missing on Monday.

The consignment of crop-spraying poison, which was enough to wipe out an entire town, disappeared when the truck carrying it was stolen in Bethal.

Luckily, the truck and its death load were found abandoned near Bethal on Wednesday morning.

The introduction of "specific" regulations regarding the transport of these substances was revealed by Dr Gerhardus Oberholster, director of environmental health services in Pretoria.

"At the moment we do have certain regulations about the packaging and labelling of dangerous substances,"

he said, "but the stricter, compulsory measures which are coming are very necessary."

The regulations envisaged were similar to the Hazchem (hazardous chemicals) system whereby vehicles transporting dangerous substances would have to have a coded or printed sign attached to the back of the vehicle, he said.

This sign would set out the emergency procedures which should be employed with that particular chemical.

All emergency services would have the key to the coded signs.

"This means that people will immediately know what medium to use to counteract the chemical, whether to evacuate the area where the chemical has spilt and so on," he said.

He explained that several South African companies were already using the Hazchem system, but on a voluntary basis.

CSO: 5000/15

BRIEFS

MEAT PRICE DROP--PORT ELIZABETH--The drought in the Eastern Cape has forced a drop in meat prices because farmers are keen to sell their livestock to minimise their losses. Mr. Cecil Moorcroft, the chairman of the Port Elizabeth Livestock Auctioneers' Association, said yesterday he expected the present low prices situation, with all the meat markets fully supplied, to continue until the drought ended. Most of the meat comes from local suppliers, and no abnormal quantities had been received from farmers in areas outside the Eastern Cape, which had been worse hit by the drought. He said farmers were keen to sell their cattle and sheep because there was very little grazing left. However, the amount of meat markets could absorb was controlled by the Meat Board and this prevented gluts. Although the quality of meat presently available was very good, it was likely to deteriorate if the drought lasted much longer, he said. [Text] [Johannesburg THE CITIZEN in English 9 Oct 82 p 5]

CSO: 5000/15

FOOD SUPPLIES TO DROUGHT AREAS DOUBLED

Harare THE HERALD in English 8 Oct 82 p 11

[Text] Bulawayo

Food being sent to drought stricken areas has more than doubled since July, the chairman of the Matabeleland drought relief committee, Cde J. F. Mudenda has said.

In an interview he said that people had asked for more food to counter the effects of the drought.

The priority areas--those worst affected by the drought--are Binga, Beitbridge, Plumtree, Psholotsho, Gwanda, Kezi and Lupane.

The other five districts of North and South Matabeland were not considered to be first priority areas as they each had an estimated population below 50,000.

The drought relief programme had experienced several problems, among them the transportation of food to the affected areas, and labour for distribution of food at district level.

The transport problem had been solved to some degree by minimising the use of district transport and concentrating on the use of transport controlled by the provincial drought relief committee.

The provincial committee had nine trucks and was hoping to receive more from the national committee when they were available.

The food distribution programme had not been affected in any way by the mealie meal shortage in Bulawayo as maize grain and not mealie meal was sent to the drought areas.

Cde Mudenda said there was an adequate supply of maize, ground nuts and beans for the relief programme.

The seventh of the relief programme's food deliveries to the 12 districts in Matabeleland North and South was due to be completed on Tuesday.

The programme, which had experienced some teething problems, had gone into high gear and was running smoothly, said Cde Mudenda.

Food distribution would continue as long as the drought held.

Despite the fact that the people in these areas were receiving food from the committees, they were not sitting back and waiting to be fed.

People had requested that they be sent crop seed so that they could begin to plough and sow once the rains broke, said Cde Mudenda.

The drought relief committee had agreed to do this but had asked the relief committee on livestock to carry out the programme.

CSO: 5000/16

TENSIONS GROW AS DROUGHT TAKES HOLD

Johannesburg THE STAR in English 28 Sep 82 p 42

[Article by Brendan Seer]

[Text]

BULAWAYO — Spring, for the farmers in the parched Matabeleland area of Zimbabwe — both the black peasants and white commercial ranchers — is no time for joyous frolicking.

With the province's main rains still more than two months away farmers are looking with anguish as their cattle keel over and die while the September sun, growing hotter each day, claims what little water there is.

The situation in tribal areas bordering Botswana, where the drought is being spoken of as the worst in living memory, is inflaming tensions and bitterness between peasants and white ranchers.

Tribal farmers, who in the Ndebele tradition are pastoral, have been looking with envy at neighbouring white farms where grazing appears to be plentiful.

White ranchers in the arid Mphoeng district bordering Botswana, blame the peasant farmers for setting up the murder by dissidents last month of one of their number. University of Zimbabwe lecturer Dr Peter

Gradewell.

His friends say he and his 15-year-old niece were gunned down by dissidents after impounding tribal cattle which had been driven on to his grazing ground.

There have been many other heated exchanges between blacks and whites over the issue, but Government officials say they are powerless to do anything.

Mr Herbert Matanga, district administrator of the border district of Plumtree, says many of the areas where the illegal grazing is being carried out are remote, and even if peasant farmers were ordered to remove their cattle, they would be back the following day.

Some white ranchers were showing enlightened and humanitarian views, in allowing their black neighbours to come on to certain portions of their land to graze cattle, said Mr Matanga.

Still others were buying skins of cattle from the tribespeople, he said.

The ranchers, for the most part, say they barely have enough grazing for their own stock, let alone the thousands which have

been deliberately driven on to their land from the adjacent communal lands.

They say the black farmers could have averted some of the worst effects of the drought by selling off large proportions of their cattle to the country's Cold Storage Commission (CSC) earlier in the year.

Mr Matanga in turn points out that the basic Ndebele man, who has been brought up with cattle, would be committing "cultural suicide" by selling off his stock, which constitute his visible wealth.

In some of the communal lands, carcasses of cattle which have succumbed to the drought literally dot the countryside.

In the Matengwe area, bordering the Tlokweng (formerly "Aankie") game reserve, the only dam for kilometres around is expected to dry up by the end of this month. Cattle are dying after getting stuck in mud at the dam, which is at its lowest ever level.

Other beasts have been lost to wild game, which come to the dam at night to drink. Peasant farmers speak of having had cattle trampled to death by rogue elephants in the competition for water.

Wallowing elephants also make the water silted, which in turn is thought to be responsible for further cattle deaths.

The people themselves, particularly in the semi-desert areas alongside Botswana, have to walk many kilometres for water, often having to dig deep into river beds to find it.

On some occasions people from Zimbabwe crossing into Botswana in search of water had been arrested by the Botswana authorities, said Mr Matanga.

Drought relief programmes were in full swing in the district, but are being hampered by the activities of armed dissidents and by the lack of transport, said Mr Matanga. He said Government health workers had found that many people in the worst-hit areas, and particularly children, were suffering from malnutrition.

The commercial farmers, said Mr Rob Sayers, Matabeleland chairman of the Commercial Farmers' Union, had not been as hard hit, as those in tribal areas, although the season had been one of the worst.

"Forward planning has enabled most com-

mmercial farmers to ride out the drought, although if we had another bad season next year, I'm afraid many of them will go to the wall," he said.

Among the farmers' contingency plans, put into operation earlier in the year, were widespread sales to the CSC, which took pressure off the land, as well as building up large stocks of silage for the cattle the previous year.

Although the first rains of this new season — light showers — have already fallen in some parts of the province, the bulk of the rain should fall during November-December. By then says Mr Sayers, cattle, in a much weakened state, will succumb to veld diseases quicker.

The farmers that made allowances for the capriciousness of the weather in their planning last year will be well off. But some, says Mr Sayers, having had two or three good seasons, seemed to believe the rains would always be sufficient.

Another Nyamandlovu rancher agreed.

"In Matabeleland, drought is always there, like death and taxes. It might slide into the background for a few years, but you cannot afford to ignore it."

DROUGHT CLAIMS MORE CATTLE IN MATABELELAND

Salisbury THE HERALD in English 4 Oct 82 p 7

[Text]

BULAWAYO.

THE disastrous effects of the drought in Matabeleland could have been minimised if people had sold their old cattle, and if grazing and water for the remaining breeding stock had been procured early.

A survey has shown that apart from starvation among Matabeleland's rural population, livestock is dying in large numbers.

The Lupane District Administrator, Cde Christopher Simela, said the drought was very acute in the area.

"Some people didn't reap anything at all from their fields," he said, adding that the Drought Relief Programme was supplying them with maize, groundnuts, salt and beans.

"We're presently trying to hire water-bowers to enable us to supply the hardest hit areas with water," he said.

Cde Simela said reconstruction of boreholes was under way, but because of the security situation, the Ministry of Water Development was reluctant to help with personnel.

He said: "Cattle are dying in our area, but we

have been given some assistance by the Forestry Commission in whose area we now have some 500 cattle grazing."

He said shortage of water in the Forestry Commission area was the major problem.

BOREHOLES

"We have drilled one borehole in the area, and the Forestry Commission authorities say if we can drill another three boreholes, they will allow an additional 200 animals on the land," he said.

Cde Simela said a few hundred cattle had died, and the remaining ones were in very poor condition.

"I feel that the situation would not be as bad as this if cattle had been taken to commercial farms like Kana Block, which has been vacant for several years, and if water sources had been developed much earlier," he said.

In the Matobo district, between 500 and 1000 cattle have perished because of drought, said a district official at Kesi.

"We have encouraged some commercial farmers to take some communal cattle for grazing, and in this way, some of our people's cattle stand a better chance of surviving."

He said the district authorities had encouraged destocking in the area which would then feed breeding stock.

"We are waiting for drilling rigs we have hired from a Bulawayo company, and we hope to get them soon."

"We are still giving out maize, and delivering water by means of bow-sayers to the hardest hit areas," he said.

The Nkai district has also been hit hard, said a district official.

"Our main problem is shortage of water, and some people drive their animals for between 30 km and 40 km to drinking points," he said.

He said the shortage of grazing land was not as serious as the lack of water on cattle because animals would eat leaves off trees.

"We have got reports of cattle dying throughout the district, but we don't yet have statistics," he said, adding that the Ministry of Water Development had promised to drill boreholes as early as last April when it was officially approached, but had not yet drilled any in the area.

"If we had sent some cattle to areas like the Gwampa Forest, and supplied drilling rigs, we could have lessened the seriousness of this problem," he said.

"Now we are waiting for sand abstraction equipment, but we have been told that there is a shortage of piping."

He said food distribution in the area had stopped temporarily during the recent census exercise, but trucks had been sent to fetch more food from Bulawayo and distribution would be resumed shortly.

NOT ENOUGH

"In this field, our problem has been that some old and disabled people who had qualified for public assistance through the Social Services Department were, instead, referred to our Drought Relief Committee, whose meagre food supplies cannot provide enough even for such cases," he said.

Drought is widespread in the Bulalima/Mangwe district, said the District Administrator, Cde Herbert Matanga, who added that the situation was "turning from bad to worse".

"The level of water in many boreholes and wells has dropped and some areas are so short of water that they are becoming health hazards," he said.

Cde Matanga said following several meetings with the Provincial Drought Relief Committee, a team of hydrologists from Harare had last week surveyed seven areas for water and would announce their results later.

"While we are waiting for drilling rigs, we have already installed five sand

abstraction plants and received another 30 only this week (on September 29) of which four will be installed in the Maintengwe River.

"The location of the remaining 26 will be discussed by our appropriate authorities," he said.

Cde Matanga said that while the district was awaiting rigs, as well as looking into the possibilities of sinking wells, there was great need for destocking throughout the district's communal lands because they were heavily over-stocked.

SOLVED

"In a way, I believe that our water problem is par-

tially solved because we have the money but not the rigs.

"We have applied to the relief committee to help with bowzers so that we can supply areas critically short of water as they are becoming health hazards," he said, adding that the areas include the Masendu locality and Nkologwe school.

Cde Matanga said local commercial farmers had been asked to take some of the communal land cattle on to their lands provided the owners of the animals would help keep out unauthorised animals from the commercial farms

helping their cattle.

On the distribution of drought relief food, Cde Matanga said: "We are waiting for more supplies because we distributed all that we had just before the census exercise started."

The drought in the Gwanda district is "very serious", said the Gwanda District and Matabeleland South Provincial Authority chairman, Cde Zephaniah Sihwa.

"The drought has hit our livestock more than the people as dams and rivers are dry and two sand abstraction projects

on the Tuli River have failed to bring out water," he said.

"We spoke to the Minister of Water Development, Cde Cephas Msipa, about the need for drilling and well-digging equipment, bowzers and troughs, but nothing has materialised up to now."

He said the Beltbridge district had drilling rigs but no grass, while the Insiza district was short of grazing, although parts of it have some water.

"If we don't get rains by November, then all our hope on cattle will vanish," he said.

BRIEFS

HWANGE GETS VITAL PUMPS--An international appeal to help save drought-hit wildlife in Hwange National Park has borne fruit, with both Zimbabwean and overseas troupes donating new pumping equipment. The equipment was handed over to the Department of National Parks and Wild Life Management this week. The director of the Conservation Trust of Zimbabwe, Mr John Pile, said that following an appeal by the department for help in replacing Hwange's aging or broken-down pumps, local and international concerns had moved quickly. One complete pumping unit had been donated by the trust, a Danish-based firm, Grundfos, had given three ejector pumps, and Stewarts and Lloyds of Harare had donated three mono pumps. A British company, R.A. Lister, had sent three Lister engines. Grundfos and another Harare concern, Ames Ltd, have agreed to inspect the remaining pumps and refurbish them where possible. Mr Pile said Hwange had been hit harder by the drought than other parks. But through the generosity of donors, the problem could be solved. During droughts the Government's first responsibility was to people and livestock. "It is here that the trust, as a non-government, non-profit body, is able to help by co-ordinating assistance programmes with the aid of business interests," he said. Earlier this week Senator Paul Savage said game--particularly elephant--was dying in large numbers in the park and called for urgent Government action. [Text] [Harare THE HERALD in English 15 Oct 82 p 9]

DROUGHT RELIEF PLAN--Bulawayo--The Minister of Lands, Resettlement and Rural Development, Cde Moven Mahachi, has no objection to controlled grazing on land bought by the Government as a temporary drought relief measure, the Minister of Water Resources and Development, Cde Cephas Msipa said yesterday. He was speaking after yesterday's meeting with Cde Mahachi to discuss proposals made by district councillors and administrators at an extraordinary meeting of the Matabeleland drought relief committee. [Text] [Harare THE HERALD in English 15 Oct 82 p 1]

UK BOOSTS DROUGHT RELIEF--The drought-relief programme yesterday received a boost with a British donation of two water-drilling rigs and eight tractors. The equipment was presented to the Minister of Water Resources and development, Cde Cephas Msipa, by the British High Commissioner, Mr Robin Byatt. It was the first consignment of seven drills and eight tractors with spares, worth a total of nearly \$500 000 under the British aid programme to Zimbabwe. Thanking Britain for the gift, Cde Msipa, said they would make a significant contribution in those parts of the country suffering from the drought. The first consignment would be used in the Midlands at Chiwundura and Takawira and the ministry had already trained the crews to operate the equipment. Mr Byatt said further discussions were going on between his government and the ministry on additional projects. [Text]
[Salisbury THE HERALD in English 6 Oct 82 p 3]

CSO: 5000/16

PIRAEUS, NIKAIA, AIR WATER, SEA POLLUTION ANALYZED

Athens AKROPOLIS In Greek 19 Sep 82 p 11

[Excerpts] Piraeus 1982. Five hundred and thirty-five thousand inhabitants and people working in the city and its suburbs. Five hundred thousand automobile "trips" a day in the streets. Daily movement in the harbor from 180 to 200 ships.

Piraeus. The busiest port of the country. The city with the most severe pollution in Europe. With the heaviest atmosphere and the most polluted waters.

The principal sources of air pollution in Piraeus are: the fertilizer plant and the cement factory in Drapetsona, 35 heavy industries and over 400 lighter ones and cottage industries within the city limits make the air unbreathable with airborne sulfur dioxide, suspended particulates and lead. According to the data collected by the Panhellenic Center for Ecological Research, after painstaking research and studies, which are known to the responsible officials, the fertilizer plant alone releases into Piraeus' atmosphere 25,000 tons of sulfur dioxide a year. The "ration" of every citizen of Piraeus is 140 grams of "pure" sulfur dioxide per day!

The president of the Center, Mr. P. Khristodoulakis, told us: "When we talk about Piraeus we cannot simply talk about an air pollution or pollution. The situation there can be expressed with only one word: Death!

"The air" he continues, "has reached the point of containing 1,300 micrograms of sulfur dioxide per cubic meter while the highest permissible international limit is of 80 micrograms. Counts of 8.9 photometric units of smoke have been taken when the limit is one unit. Do not even talk about the suspended particulates, dust, etc. While the highest permissible limit is 200 micrograms per cubic meter, in Piraeus we have counted 2,500 micrograms."

These frightful figures have their sad repercussion in illnesses and death. By comparing the official data of IKA [Social Insurance Foundation] and Piraeus' Vital Statistics Bureau we find that:

During the five-year period 1971-1976, 63,000 persons were admitted to hospitals for respiratory ailments and 79,000 persons with cardio-vascular diseases. During the five-year period 1976-1981, the respiratory ailments reached 172,000 admissions and the cardio-vascular diseases 193,000. That is, the ailments had tripled.

The increase in pulmonary cancer, which affects inhabitants of Piraeus, is also impressive. It almost quadrupled in four years. From 2,217 victims in 1977, we reached 7,983 in 1981.

"These almost unbelievable numbers," the president of PAKOE [Panhellenic Center for Ecological Research] told us, "have created the need to study the relation of mortality to the pollution of the air in Piraeus. Thus, the scientists of the Center made studies and research under the supervision of Mr. Trikhopoulos, professor of epidemiology at the university.

The Harbor

The air pollution is the most serious, but not the only problem of Piraeus. The second great scourge is the pollution which has totally deprived of life the waters and threatens the people directly. We are not talking only of the harbor where conditions could be considered "physiological" because of the high ship movement. The pollution of the sea is general in Piraeus.

Beyond the pollution, which is inevitably caused by ships and the traffic and installations of the large port, there are two main reasons which not only have destroyed the waters, but have turned them into foci of disease:

The Akrokeramos at Keratsini, which discharges all the wastes of the Basin;

The two "closed" coves of the city, Pasalimani and Tourkolimano--especially Pasalimani--where 70 sewers discharge their wastes!

The putrefaction and pollution in these two coves have reached such a point that they emit an unbearable stench caused by hydrosulfuric acid which is produced in great quantities. Young students very frequently faint in the schools located around them. Charges are filed almost daily, but no concern is shown and, naturally, no corrective measures are adopted.

The Beaches

We mention the most typical situation: This summer at the two public beaches--Freattyda and Votsalakia--25,000 colobachter [eserichia coli] were counted in 100 cubic centimeters of water. In order to perceive the extent of the danger, we must say that, internationally, if there are waters containing more than 100 E. coli bacteria in the same measure of water, they are considered polluted and, naturally, closed to the public. The 25,000 bacteria(!) which were counted in Piraeus should have sounded the alarm. Nevertheless, the City continues to use the two beaches and is indifferent to the terrible dangers...

"These are the first things which must be dealt with immediately in the city. The issue of polluting industries, which is the most serious, must be dealt with in the long run, otherwise Piraeus will die!"

Nikaia. A large neighborhood with more than 110,000 inhabitants. A commercial center with 3,720 shops. A big city, almost, which pays heavy dues to the contemporary scourge called pollution. Within its municipal boundaries four industries and 43 handicraft industries, most of them pollution-generating, make their heavy contribution to the impressively shortened lifespans.

Continuous measurements taken in the area in 1982 show that the pollution is at rates up to four times higher than the highest permissible limits.

Smoke was found to be 3.8 photometric units, sulfur dioxide 230 micrograms, nitrogen dioxide at 397 and the suspended particulates at 753 micrograms.

The mayor of Nikaia, Mr. Logothetis stated that the problem is acute because of the increased pollution which is generated by the heavy industries. Lately a new scourge was added to it, stench from dangerous substances which causes fainting and comes from the refinery at Aspropyrgos.

"We held meetings and sent reports to the responsible ministries," the mayor told us. From the information we have up to now, no effort has been made, at least to find out the sources of the additional pollution which is so dangerous and causes fainting and other disfunctions in the bodies of the residents of the area.

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